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2 **CLAIMS:**

3 What is claimed is:

1 1. An apparatus for retrieval of storage units from a
2 library, the apparatus comprising:

3 a first center column having a first arm with first
4 and second ends wherein the first end of said first arm
5 is attached to said first center column and said first
6 arm extends substantially radially outward from said
7 first center column;

8 a first hand attached to the second end of said
9 first arm for manipulating storage units from the
10 library;

11 a second center column having a second arm with
12 first and second ends wherein the first end of the second
13 arm is attached to the second center column and said
14 second arm extends substantially radially outward from
15 said second center column; and

16 a second hand attached to the second end of said
17 second arm for manipulating storage units from the
18 library; wherein

19 said first arm and said second arm rotate about a
20 same vertical axis of rotation; and

21 each arm and hand is independently moveable from the
22 other arm and hand.

1 2. The apparatus of claim 1, wherein said first center
2 column is attached at one end to a ceiling of the library

3 and said second center column is attached at one end to a
4 floor of the library.

1 3. The apparatus of claim 1, wherein each of said hands
2 is moveable longitudinally along a respective one of said
3 arms.

1 4. The apparatus of claim 1, wherein each of said
2 center columns is substantially cylindrically symmetric.

1 5. The apparatus of claim 1, wherein said first center
2 column is axially disposed within said second center
3 column.

1 6. The apparatus of claim 1, wherein the library
2 comprises walls arranged around a central axis and the
3 storage units are stored in cells in the walls.

1 7. The apparatus of claim 1, wherein each of said
2 center columns is substantially cylindrical.

1 8. A data tape storage and retrieval system,
2 comprising:
3 a plurality of storage cells arranged radially
4 around a central point, wherein the plurality of storage
5 cells are configured to receive data storage objects;
6 a first rotational horizontal beam rotatable around
7 the central point;
8 a second rotational horizontal beam rotatable around
9 the central point;

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10 a plurality of vertical supports, one of said
11 vertical supports attached to one end of each of said
12 rotational horizontal beams;

13 a plurality of gripping means configured for
14 gripping data storage objects to be retrieved from said
15 plurality of storage cells; and

16 means for movably attaching at least one of said
17 gripping means to traverse each of said vertical
18 supports; wherein

19 each of said rotational horizontal beams is capable
20 of rotation independent of the rotation of the other of
21 said rotational horizontal beams.

1 9. A data storage and retrieval system comprising:

2 a polygonal array of cells, wherein the polygonal
3 array of cells are inwardly disposed with openings
4 configured to receive data storage units;

5 a first robot unit, located within the polygonal
6 array of cells, wherein the first robot unit transports a
7 data storage unit to and from the polygonal array of
8 cells; and

9 a second robot unit, located within the polygonal
10 array of cells, wherein the second robot unit manipulates
11 data storage units placed in the polygonal array of cells
12 independently of the first robot unit.

1 10. The data storage and retrieval system of claim 9,
2 wherein the data storage units are electronic magnetic
3 storage cartridges.

1 11. The data storage and retrieval system of claim 9,
2 wherein the polygonal array of cells is a circular array
3 of cells.

1 12. The data storage and retrieval system of claim 9,
2 further comprising:

3 collision avoidance means for preventing collisions
4 between the first robot unit and the second robot unit
5 during operation.

1 13. The data storage and retrieval system of claim 9,
2 wherein the first robot unit and the second robot unit
3 both include a hand, wherein the hand is moveable to
4 remove a data storage unit from a cell from the
5 cylindrical array of cells.

1 14. The data storage and retrieval system of claim 9,
2 wherein the polygonal array of cells in the data storage
3 and retrieval system includes a major axis within the
4 polygonal array of cells, wherein the first robot unit
5 and the second robot unit are located along the major
6 axis.

1 15. An apparatus for retrieval of storage units from a
2 library, the apparatus comprising:

3 a first center column having a first arm with first
4 and second ends wherein the first end of said first arm
5 is attached to said first center column and said first
6 arm extends substantially radially outward from said
7 first center column,

8 a first hand attached to the second end of said
9 first arm for manipulating storage units from the
10 library;

11 a second center column having a second arm with
12 first and second ends wherein the first end of the second
13 arm is attached to the second center column and said
14 second arm extends substantially radially outward from
15 said second center column; and

16 a second hand attached to the second end of said
17 second arm for manipulating storage units from the
18 library; wherein

19 said first arm and said second arm rotate about a
20 same vertical axis of rotation; and

21 each arm and hand is independently moveable from the
22 other arm and hand.

1 16. The apparatus of claim 15, wherein each of said
2 hands is moveable longitudinally along a respective one
3 of said arms.

1 17. The apparatus of claim 15, wherein each of said
2 center columns is substantially cylindrically symmetric.

1 18. The apparatus of claim 15, wherein said first center
2 column is axially disposed within said second center
3 column.

1 19. The apparatus of claim 15, wherein the library
2 comprises walls arranged around a central axis and
3 storage units are stored in cells in the walls.

1 20. The apparatus of claim 15, wherein each of said
2 center columns is substantially cylindrical.

1 21. A data tape storage and retrieval system,
2 comprising:

3 a plurality of storage cells arranged radially
4 around a central point;

5 a first rotational horizontal beam rotatable around
6 the central point;

7 a second rotational horizontal beam rotatable around
8 the central point;

9 a plurality of vertical supports, one of said
10 vertical supports attached to one end of each of said
11 rotational horizontal beams;

12 a plurality of gripping means for gripping data
13 storage objects to be retrieved from said plurality of
14 storage cells; and

15 means for movably attaching at least one of said
16 gripping means to traverse each of said vertical
17 supports, wherein each of said rotational horizontal
18 beams is capable of rotation independent of the rotation
19 of the other of said rotational horizontal beams.

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